DANIELI & O'KEEFE ASSOCIATES O'KEEFE

 ${\it Conferences} \, \cdot \, {\it Expositions} \, \cdot \, {\it Meetings} \, \cdot \, {\it Special Events}$ Association Management

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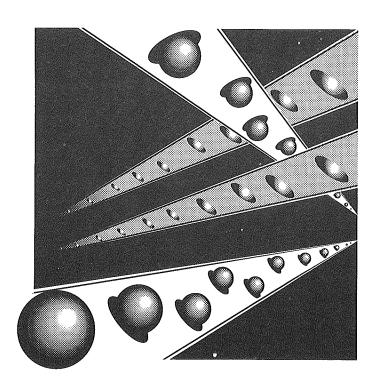
DAGS95

Electronic Publishing and the Information Superhighway

May 30 - June 3, 1995

Boston Park Plaza Hotel • Boston Massachusetts

"Bringing together the diverse communities that make up electronic publishing."



FINAL PROGRAM

Hosted by Dartmouth College and The Dartmouth Institute for Advanced Graduate Studies (DAGS)



A message from the conference chairs

Welcome to the Dartmouth Institute for Advanced Graduate Studies' 1995 Conference on Electronic Publishing and the Information Superhighway.



The field of publishing is rapidly changing and, in many ways, "going digital." These changes have been promoted and enhanced by many communities. Computer scientists and technologists have been developing new ways of storing, representing, finding, transmitting, and organizing information. Publishers have been exploring new ways to gather, reproduce, and distribute publications. Authors have been developing new modes of writing and new document structures that take advantage of the new technology. Librarians have been finding new ways to give readers and researchers access to rapidly expanding amounts of electronic publications. Lawyers and policy makers have been redefining intellectual property rights to accommodate the new access methods that digital publications allow.

We expect that DAGS95 will be exciting, vibrant, and "the place to be" for those interested in electronic publishing. We're glad you've been able to join us.



Fillia Makedon

Samuel Rebelsky

Fillia Makedon is an Associate Professor of Computer Science at Dartmouth College. She is Director of a multimedia systems laboratory, the DEVLAB, and Director and founder of DAGS, the Dartmouth Institute for Advanced Graduate Studies. She received her Ph.D. in computer science from Northwestern University in 1982. She is author of numerous scientific papers and recipient of many awards in areas of parallel computation, algorithm visualization, and VLSI theory. She is currently supervising research projects which include digital video editing systems, electronic publishing, and multimedia authoring. Samuel Rebelsky is an Assistant Professor of Computer Science at Dartmouth College and Assistant Director of the DEVLAB. His research areas include electronic publishing, programming languages, and multimedia systems. Sam received his Ph.D. in Computer Science from the University of Chicago in 1993. He is a founding member of the ACM SIGACT electronic publishing board, coordinated electronic submissions for STOC'95 (the ACM symposium on the theory of computation) and FOCS95 (the IEEE symposium on the foundations of computer science), and developed electronic proceedings for DAGS '93.

Conference Chairs

Program Chairs: Fillia Makedon, Samuel Rebelsky Dartmouth College

Operations Chair: James Ford Dartmouth College Panels Chair: Donald Kreider Dartmouth College Posters Chair: John Buford U. Mass-Lowell

Tutorials and Workshops Chair: P. Takis Metaxas Wellesley College Audio/Visual and Networking Chair: Charles Owen Dartmouth College

Demonstrations Chair: Charles Owen Dartmouth College Birds of a Feather Chair: Viera Proulx Northeastern University Volunteers Chair: Michael Ferrantino Boston University

Steering Committee

Fillia Makedon (chair), Scot Drysdale, Lawrence Levine, P. Takis Metaxas, Samuel Rebelsky

Program Committee

Fillia Makedon Dartmouth/CS, (Chair). Samuel A. Rebelsky Dartmouth/CS, (Co-Chair).

Bob Allen Bellcore; Jon Appleton Dartmouth/Music; John Buford U. Mass-Lowell; Jon Crowcroft U. College London-England; Steve Cunningham CSUS, SIGGRAPH; George Cybenko Dartmouth/Engineering; John Danskin Dartmouth/CS; Chip Elliott BB&N; Domenico Ferrari U.C. Berkeley; Otmar K.E. Foelsche Dartmouth/Language Resource Center; Ed Fox Virginia Tech; Peter Gloor UBS-Switzerland; Michael Goodrich Johns Hopkins; Carey Heckman Stanford Law; Joseph Henderson Dartmouth/Medicine; Albert Henning Dartmouth/Engineering; David Karger Bell Labs; MIT; Tom Leighton MIT; Thomas Little Boston U.; Hermann Maurer Graz U. of Tech.-Austria; P. Takis Metaxas Wellesley; Michael O'Donnell U. Chicago; Andrew Odlyzko Bell Labs; Maria C. Pantelia U.N.H.; Grammati Pantziou U. Central Florida; Paolo Paolini Milano-Italy; Ian Parberry U. North Texas; Steven Pemberton CWI-Amsterdam; Larry Polansky Dartmouth/Music; Daniel Richards Dartmouth/Medical Libraries; Isidore Rigoutsos IBM; Daniela Rus Dartmouth/CS; David Sherman U. Bordeaux-France; Janos Simon U. Chicago; Randall Stewart U. Utah, Hermes Pub.; James Storer Brandeis; David Tennenhouse MIT; Costantino Thanos CNR-Italy; Chris Welty Vassar; Mark J. Williams Dartmouth/Film

Advisory Board

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Conference Proceedings Editorial Board James Ford, Fillia Makedon, Samuel Rebelsky

Electronic Conference Proceedings Committee

James Ford, Peter Gloor, Fillia Makedon, James Matthews, Mark Moline, Charles Owen, Samuel Rebelsky, Oliver van Ligten, Qin Zhang

The DAGS95 final program was produced by Charles A. Steele and James C. Ford

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Special Events **Demonstrations and Posters** Thursday 2:00 PM - 7:30 PM Exeter Room **Invited Speakers Exhibits** Thursday 10:00 AM – 1:30 PM 3:00 PM - 7:00 PM **Papers** Friday 10:00 AM – 1:30 PM **Conference Banquet** Schedule of Events Thursday 6:00 PM – 9:00 PM Arlington, Berkeley, Clarendon Rooms Dinner speaker: Peter Prichard, Freedom Forum **Panels** Two types of awards will be given: • The Donald B. Johnson Memorial DAGS Scholar award for the best student paper and

Hard Copy Conference Proceedings

the best paper by a recent Ph.D.

The proceedings, including Papers and summaries of Invited Speaker Presentations and Panel Discussions, are published in hard copy format by Birkhäuser Publishers, Boston.

•The Donald B. Johnson Memorial DAGS Fellow award for

Electronic Conference Proceedings

The electronic proceedings incorporate additional materials, including slides from presentations, and will be produced on-line by Addison-Wesley Interactive. Information and URL can be obtained at http://www.cs.dartmouth.edu/~dags/homepage.html

Journal Publications

Extended versions of selected papers will appear in special issues of the *Journal of Multimedia Tools and Applications* and *Multimedia Systems Journal*.

Some Dartmouth History

Thirty years ago, two mathematics professors, John Kemeny and Thomas Kurtz, saw that computing could be a tool of intellectual and practical value. Their vision called for computing to be freely accessible to everyone and easy to use. More importantly, computing resources should be consistent; students and faculty should not have to learn a new system with every new class or task. Their pursuit of that vision during the 1960s resulted in the development of one of the first interactive time-sharing computer systems and the BASIC programming language, launching Dartmouth into its acknowledged role as a pioneer in academic computing. Dartmouth has continued to make computing accessible, easy to use, and consistent. Computing Services, housed primarily in the Kiewit Computation Center, maintains a working alliance with the students, faculty, and administration to integrate computing into the curriculum and the life of the whole College. As a result, computing is an integral part of the Dartmouth experience.

About DAGS and the DEVLAB

Tutorials

The Dartmouth Institute for Advanced Graduate Studies was founded in 1991 by Donald B. Johnson and Fillia Makedon to provide an environment in which theoretical computer scientists, experimental computer scientists, and users of computing technology could provide formal solutions to problems relating to high performance computing as it applies to practical and interdisciplinary areas. Since 1991, the institute has received funding from the National Science Foundation and Dartmouth College. One of its activities has been an annual summer institute with a different focus each year. In 1992, the topic was "Parallel Computation: Practical Implementation of Algorithms and Machines." An interactive electronic proceedings, including presentations and papers, was published by Springer-Verlag. The second DAGS symposium, held in the summer of 1993, focused on "Parallel I/O and Databases." The third DAGS symposium, held in the summer of 1994, was on problem solving environments and "Providing Massively Parallel Computing to Problem Solvers."

The Dartmouth Experimental Visualization Laboratory (DEVLAB) is a laboratory affiliated with the institute focusing on multimedia systems research. Founded in 1991 by Fillia Makedon, its director, the mission of the DEVLAB is to apply computer technology to a variety of uses, including education, and to give undergraduates and graduate students experience working with multimedia and visualization techniques. The DEVLAB supported the construction of the electronic proceedings for the DAGS institutes, using undergraduate interns to develop interfaces and manipulate materials. Other DEVLAB projects include VideoScheme, a programmable video editing system; WISKIT, a multimedia "kit" to attract women to computer science; the electronic classroom; a collection of multimedia visualizations for teaching parallel computing to novices; and multimedia information retrieval research.

This year the institute is expanding its focus and collaborating with the DEVLAB, and has selected electronic publishing as a topic. The lab is working together with several companies and research institutes on electronic document management on the World Wide Web.



Peter J. Denning: The ACM Electronic Publishing Plan

Tuesday 6:30 PM — 7:30 PM Stanbro Room Session Chair: Samuel Rebelsky
Publishing has reached an historic divide. Ubiquitous networks, storage servers, printers, and document and graphics software are transforming the world from one in which only a few publishing houses print and disseminate works, to one in which any individual can print or offer for dissemination any work at low cost and in short order. This poses major challenges for publishers of scientific works and for the standard practices of scientific peer review. The Association for Computing Machinery (ACM) aims to be one of the first scientific society publishers to cross the divide. ACM has embarked on an ambitious electronic publication plan and has established new copyright policies to accompany it.

Peter Denning is associate dean for computing, chair of the department of computer science, and director for the Center for the New Engineer in the School of Information Technology and Engineering at George Mason University. He is also chair of the ACM publications board.

Andries van Dam: Electronic Books: Past, Present and Future

Wednesday 9:00 AM – 10:00 AM Plaza Ballroom *Session Chair: David Tennenhouse* Printed books have many attractive features. However, they cannot exhibit dynamic properties and large collections of books are difficult to maintain, update, and access. Electronic books have the potential of preserving the attractive properties of printed books while ameliorating their shortcomings. An essential ingredient of electronic books is user control of the presentation's content and format. An important example of such interactivity is what I call the interactive illustration: user-controlled, real-time animation derived from stored models of objects and phenomena.



Andries van Dam is a L. Herbert Ballou University Professor and Professor of Computer Science at Brown University, where he has been since 1965. His research emphasizes computer graphics, text processing and hypermedia systems, and workstations. He has been working for more than 25 years on systems for creating and reading "electronic books" based on high-resolution interactive graphics systems.



Gregory Crane: Libraries, Old and New, and the Possibilities of the New Technology

Wednesday 10:30 AM - 11:30 AM Plaza Ballroom Session Chair: Andries van Dam The rise of interactive, multimedia technology opens up new possibilities and challenges not just for publication, but for the practice of scholarship as well. The representation of ideas has a long history, and this talk will trace links between present issues and historical antecedents. The printing press, of course, not only made Latin bibles cheaper but made economically viable vernacular bibles, thus undercutting established patterns of authority. This paper will consider historical precedents such as the impact of alphabetic writing and the light that they shed upon the present.

Gregory Crane is a Professor at Tufts University. He has been involved in information retrieval and hypermedia projects. He is currently the editor in chief of the Perseus project which has developed a hypermedia data base on ancient Greek Culture.

Timothy Lenoir and Sha Xin Wei: A Framework for Composing Multimedia Simulations

Wednesday 11:30 AM – 12:30 PM Plaza Ballroom Session Chair: Hermann Maurer

The Metamedia Distributed Database (MMDD) is capable of managing the association of arbitrary renderable objects (text, graphics, sound, video, applications). This talk will present a significant application of MMDD to the SiliconBase project, a study of the Silicon Valley technoscience region.

Timothy Lenoir is Professor of History and Co-Chair of the Program in History and Philosophy of Science at Stanford University. His research interests include aspects of the history of biology and medicine from the Enlightenment to the 20th century. His current research projects include SiliconBase—A History of Silicon Valley and documenting the relation between universities and industry in the development of high-technology in the 20th century.

Sha Xin Wei is a staff member of Stanford University's Academic Software Development group, specializing in mathematics — differential geometry and geometric visualization, simulations of physical and human systems, and distributed media. He joined the Stanford-Apple Faculty Authoring Development Project in 1984.

Peter Wegner

Multimedia Document Engineering for Nonmajors

Wednesday 2:00 PM – 2:30 PM Berkeley/Clarendon Rooms Session Chair: Donald Kreider As computer science becomes more application-driven and outward-looking, introductory courses for majors may evolve from their current emphasis on programming to an emphasis on document engineering. Ten years from now first courses for majors may be closer in content to today's survey multimedia courses than to current courses in Pascal or C. Even now, these are becoming more design-oriented and less preoccupied with low-level algorithms and control structures. As technology matures we will develop a framework that spans both programming and document engineering.



Peter Wegner is a Professor of Computer Science at Brown University. Currently he is the Editor in Chief of Computing Surveys and is invlolved, as a member of the ACM Publications Board, in planning the conversion of ACM publications from paper to partially electronic form. His current research is concerned with the conceptual foundations of object-oriented programming, while his teaching includes the development of an innovative introductory course on multimedia document engineering.



James A. Storer

High Performance Adaptive Data Compression

Wednesday 2:30 PM – 3:30 PM Berkeley/Clarendon Rooms Session Chair: John Danskin This talk will include a discussion of current research on data compression and the use of data compression in multi-media applications. Key applications of data compression include: communications, data storage, and machine learning. Some recent methods are fast and compress well over a wide range of data types and fidelity criteria.

James A. Storer is a Professor of Computer Science and Chairman of Computer Science at Brandeis University and is a member of the Brandeis Center for Complex Systems. He received

his Ph.D. in Computer Science from Princeton University and has been a researcher (MTS) at Bell Laboratories.

Barbara Simons

Where Are We Going on the Information Superhighway: Electronic Democracy or Electronic Tranquilizer?

Thursday 9:00 AM – 10:00 AM Berkeley/Clarendon Session Chair: Scot Drysdale Technical and policy decisions can frequently have an unanticipated impact. Many decisions are yet to be made about the proposed Information Superhighway, or National Information Infrastructure (NII). Special interest groups are spending a lot of money in attempting to influence these decisions. As the builders and early users of the net, we have considerable knowledge of the technical options and difficulties. What should be our role in providing input for the debate?



Barbara Simons is currently a member of the Application Development Technology Institute in the IBM Software Solutions Division. Dr. Simons is a Fellow of both AAAS and ACM. In 1992 she was awarded the CPSR Norbert Wiener Award for Professional and Social Responsibility in Computing, and she was recently selected as one of Open Computing's top 100 women in computing. Dr. Simons chairs USACM, the ACM U.S. Public Policy Committee. Dr. Simons was a co-founder of the U.C. Berkeley Computer Science Department Reentry Program for Women and Minorities.



Alex Pentland

Image and Video Semantics

Thursday 9:00 AM - 10:00 AM Plaza Ballroom Session Chair: Daniela Rus Within the next decade, the majority of data carried over telecommunications links are likely to be visual material. The biggest problem in delivering video and image services is that the technology for organizing, searching, and presenting images is still in its infancy. Alex Pentland will describe a demonstration system which gathers and presents video over standard ISDN telephone lines.

Alex Pentland is Head of the Perceptual Computing Section at the M.I.T. Media Laboratory. He has done research in artificial intelligence, machine vision, human vision, and computer graphics, and has

published more than 180 scientific articles in these areas. He has won awards from the IEEE, AAAI, Ars Electronica, NASA, and the Smithsonian.

Joseph V. Henderson

New (Old) Models for Network-Based Learning

Thursday 2:00 PM – 3:00 PM Plaza Ballroom Session Chair: George Cybenko
To use the evolving Global Information Network and World Wide Web effectively, users must have access to and facility with specialized systems. There is little ability or effort to organize and develop coherent educational experiences. We propose the development and dissemination of educational programs that adopt a more familiar, television - like "look and feel." These programs should — without apologies — teach.



Joseph V. Henderson, MD, MA is Associate Professor of Community and Family Medicine, Associate Professor of Surgery, Dartmouth Medical School; Adjunct Associate Professor of Education and of Engineering, Dartmouth College. Dr. Henderson's main interests are in the use of computer, communications, and media technologies in education and in use of data visualization methods to provide access to large sets of multimedia information.



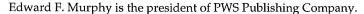
Brewster Kahle

The Web and Beyond: Agent-Based Publishing on the Internet

Friday 9:00 AM – 10:00 AM Plaza Ballroom Session Chair: John Buford Inventor and architect of the WAIS electronic publishing system, Brewster Kahle has been an influential leader in the electronic publishing industry. He founded Wide Area Information Servers Inc. in July 1992 to create software products and consulting services to further develop the role of the WAIS in Internet publishing. As President of WAIS Inc., Brewster is pioneering new publishing paradigms, including Internet-based information services and agent-based publishing.

Edward Murphy Publishing New Media for Higher Education

Friday 11:00 AM – 12:00 Noon Berkeley/Clarendon *Session Chair: P. Takis Metaxas* Educational publishers are scrambling to create a future for themselves with new media while maintaining and growing their traditional print based businesses. What are the business opportunities that make this transition worth the effort? How are publishers responding to these opportunities? Who's winning and why?







T. V. Raman

AsTeR —Towards Display-Independent Electronic Documents

Friday 2:00 PM - 3:00 PM Berkeley/Clarendon Session Chair: Samuel Rebelsky The advent of electronic documents and the consequent creation of digital libraries has a profound impact on how we produce, organize, store, retrieve and consume information. One specific aspect of the opportunities opened up by electronic publishing is the ability to present information in multiple modalities.

T. V. Raman currently works at Digital's Cambridge Research Lab. His principal areas of interest include multimedia user interfaces and high-level encodings of electronic information to facilitate multimodal access.

Tim Berners-Lee

World Wide Web: The Consortium, and Plans for the Future

Friday 3:15 PM — 4:15 PM Plaza Ballroom Session Chair: Fillia Makedon
Tim Berners-Lee is with the Laboratory for Computer Science (LCS) at MIT. He directs the W3
Consortium which coordinates W3 development. While working at CERN in 1989 he created the
World Wide Web. Before coming to CERN, he was a founding director of Image Computer
Systems, and before that he was a principal engineer with Plessey Telecommunications. He is
married to Nancy Carlson and they have two children.



DOCUMENT RETRIEVAL

Wed 10:30 AM - 12:30 PM Berkeley/Clarendon Rooms Session Chair: Robert Allen

Content-Based Image Retrieval

Robert Gray Dartmouth

Structural Queries in Electronic Corpora

Daniela Rus Dartmouth, James Allan U. of Massachusetts-Amherst

Hypermedia Browsing and the **Online Publishing Process**

Klaus Süllow, Rainer Pagé GMD-IPSI

Evaluation of a Query Language for Structured **HyperMedia Documents**

John Buford UMass-Lowell

DOCUMENT STRUCTURES

Wed 2:00 PM - 3:30 PM Plaza Ballroom Session Chair: Mark Nodine

Augmenting Text: Good News on Disasters

Sara Elo MIT Media Lab

Toward a Taxonomy of Logical Document Structures

Kristen Summers Cornell

Two Digital Library Interfaces which Exploit Hierarchical Structure

Robert B. Allen Bellcore

Models of Communication

Wed 4:00 PM - 5:00 PM Plaza Ballroom

Session Chair: James Storer

Modeling for Interaction in Virtual Worlds

Curtis Lisle Inst. for Simulation and Training, U. Central Florida

Direct Metaphor and User Interaction in the Electronic **Libraries of the Future**

Matthew Williams Oracle

SHORT PAPERS

Thurs 10:30 AM - 12:00 Noon Plaza Ballroom Session Chair: Albert Henning

The Internet and the Aspiring **Games Programer**

Ian Parberry *U. of North Texas*

Digital Libraries and Large Text Documents on the World Wide Web

Harry Plantinga U. of Pittsburgh

Making Multimedia Work for Women

Adrienne GreenHeart Boston University

PH Model: A Persistent Approach to Versioning in **Hypertext Systems**

Georgia Panagopoulou, Spiros Sirmakessis, Athanasios Tsakalidis, U. of Patras

Developing and Using Documentation Tools for Setext

David Martland Brunel University

ACADEMIC PUBLISHING

Thurs 3:30 PM - 5:00 PM Plaza Ballroom

Session Chair: Michael O'Donnell

InterJournal: A Distributed **Refereed Electronic Journal**

J. Redi, Y. Bar-Yam Boston University

J.UCS and Extensions as **Paradigm for Electronic Publishing**

Hermann Maurer, Klaus Schmaranz Graz University of Technology

The SIGACT Theoretical Computer Science Genealogy: **Preliminary Report**

Ian Parberry U. of North Texas, David S. Johnson AT&T Bell Laboratories

Calculus Modules OnLine: An Internet Multimedia Application (short paper)

Leslie Bondaryk PWS Publishing

Electronic Publishing of Virus Structures in Novel. Multimedia Formats on the World Wide Web (short paper)

Stephan M. Spencer, Jean-Yves Sgro, Max L. Nibert U. of Wisconsin

APPLICATIONS

Fri 10:30 AM - 12:00 Noon Plaza Ballroom Session Chair: Peter Gloor

Language Learning via the **World Wide Web**

Mark H. Nodine Motorola Cambridge Research Center

The Design of MMM: A Model **ManageMent System for Time** Series Analysis

Oliver Günther, Rudolf Müller Humbolt Universität Andreas S. Wiegand U. of Colorado

Multimedia Information Delivery and the MHEG Standard

Chetan Gopal, Roger Price U. Mass-Lowell

INTELLECTUAL PROPERTY

Fri 1:30 PM - 3:00 PM Plaza Ballroom Session Chair: Carey Heckman

Legal Aspects of Electronic Publishing: Look Both Ways Before Crossing This Street

Glen M. Secor

Transaction Protection for Information Buyers and Sellers

Steven Ketchpel Stanford

A Copyright Management System for Networked Interactive Multimedia

John S. Erickson Dartmouth Medical School /Thaver

The Art of Intellectual Property **Strategy** (special presentation)

Carey Heckman Stanford

INDIVIDUAL PAPERS

Wed 10:30 AM - 11:00 AM

HTGraph: A New Method for Information Access Over the **World Wide Web**

Yee-Hsiang Chang Hewlett-Packard, Ellis Chi MIT

Thurs 1:30 PM - 2:00 PM

A System to Facilitate Teaching and Learning with Network-based Interactive Multimedia

Daniel C. O'Connor Dartmouth Medical School/Thaver

Fri 10:30 AM - 11:00 AM

Dynamic Authoring and Retrieval of Textbook Information: Dartext

Albert Henning Dartmouth/Thayer

Fri 1:30 PM - 2:00 PM

Report on European Projects in **Electronic Publishing** (special

presentation)

Nikitas Kastis Lambrakis Research Foundation, Fillia Makedon Dartmouth

Schedule of Events

Tuesday						
May 30	8:30 AM - 7:30 PM	Registration	Mezzanine			
	10:00 AM - 5:30 PM	T1 Information Distribution Usi				
	Full-day Tutorials	T3 Introduction to Multimedia In	Clarendon Room			
	2:00 PM - 5:30 PM	T4 An Introduction to SGML by	Whitehill Room			
	Half-Day Tutorials	T5 Authoring for the World Wid	Whittier Room			
	6:30 PM - 7:30 PM	Opening Remarks Samuel Re Invited Speaker Peter J. Denning: The ACM Elec	Stanbro Room			
	7:30 PM – 8:30 PM	Discussion and coffee				
	7:30 AM – 4:00 PM	Registration	Mezzanine			
May 31	9:00 AM – 10:00 AM	Invited Speaker Andries van Dam: Electronic B	Plaza Ballroom			
	10:30 AM – 12:30 PM	Terrace Room Paper HTGraph: A New Method for Information Access Over the World Wide Web	Berkeley/Clarendon Paper Presentations Document Retrieval Session	Plaza Ballroom Invited Speakers Gregory Crane: Libraries, Old and New, and the Possibilities of the New Technology		
		Panel Electronic Journals: For Whom the Bell Tolls		Timothy Lenoir, Sha Xin Wei: A Framework for Composing Multimedia Simulations		
	2:00 PM - 3:30 PM	Terrace Room Panel Scholarly Electronic Publishing and Access: New Models from Publishers and Librarians	Plaza Ballroom Paper Presentations Document Structures Session	Berkeley/Clarendon Invited Speakers Peter Wegner: Multimedia Document Engineering for Nonmajors		
				James A. Storer: High Performance Adaptive Data Compression		
	4:00 PM - 5:30 PM	Berkeley/Clarendon Panel Emerging User Interfaces for the Information Superhigh- way	Terrace Room Panel Electronic Multimedia Publishing Over the World Wide Web	Plaza Ballroom Paper Presentations Models of Communication Session (ends at 5:00 p.m.)		
	8:00 PM – 10:00 PM	Rooms to be announced Birds of a Feather	Terrace Room Panel Expanding Museum Based Education Using Multimedia Tools	Whitehill Room Panel Electronic "Texts" for Engineering Education and Technical Training		
Thursday	8:30 AM – 4:00 PM	Registration		Mezzanine		
June 1	10:00 AM - 1:30 PM 3:00 PM - 7:00 PM	Exhibits		To be announced		
	9:00 AM – 10:00 AM	Berkeley/Clarendon Invited Speaker Barbara Simons: Where are We Going on the Information Superhighway: Electronic Democracy or Electronic Tranquilizer?	Plaza Ballroom Invited Speaker Alex Pentland: Image and Video Semantics			

Thurso June 1 (conti	10:30 AM – 12:00 Noon	Terrace Room Panel Directions in Humani- ties Publications	Berkeley/Clarendon Panel Use of Animation and Visualization in Educational Electronic Publishing	Plaza Ballroom Short Papers Session
_	1:30 PM - 3:00 PM	Terrace Room Panel The Freedom of the Press Project — Electronic Publishing Lessons for Libraries, Informa- tion Technology and University Presses	Plaza Ballroom Paper A System to Facilitate Teaching and Learning with Network-based Interactive Multi media	Exeter Room Demonstrations and Posters (Open until 7:30 PM)
			Invited Speaker Joseph Henderson: New (Old) Models for Network-Based Learn	ing
_	3:30 PM - 5:00 PM	Terrace Room Panel The Publishers' Perspective	Plaza Ballroom Paper Presentations Academic Publishing Session	
_	6:00 PM - 9:00 PM	Reception and Award Dinner Speaker: Pete		Arlington/Berkeley/Clarendon
Friday	8:30 AM – 3:15 PM	Registration	The state of the s	Mezzanine
June 2	9:00 AM -10:00 AM	Plaza Ballroom		
	10:00 AM – 1:30 PM	Exhibits	·	Rooms to be announced
	10:30 AM-12:00 Noon	Terrace Room Panel Perils and Pitfalls of Electronic Conference Proceed- ings	Plaza Ballroom Paper Presentations Applications Session	Berkeley/Clarendon Paper Dynamic Authoring and Retrieval of Textbook Informa- tion: Dartext
				Invited Speaker Ed Murphy: <i>Publishing New</i> <i>Media for Higher Education</i>
-	1:30 PM - 3:00 PM	Terrace Room Panel Obstacles in the Design and Implementation of Com- pany-wide Information	Plaza Ballroom Paper Presentations Intellectual Property Session	Berkeley/Clarendon Presentation Report on European Projects in Electronic Publishing
		Highways		Invited Speaker T. V. Raman: AsTeR–Towards Display-Independent Electronic Documents
	3:15 PM - 4:15 PM	Invited Speaker Tim Berners-Lee: World Wide W The Consortiu Closing Remarks Fillia Maked	m and Plans for the Future	Plaza Ballroom
Saturd	7:30 AM – 10:00 AM	Registration		
June 3	<u> </u>	T7 Introduction to HyTime by L	. Rutledge	Whittier Room
-	9:00 AM – 12:30 PM Half-Day Tutorial	T8 Authoring for the World Wid	le Web by S. Rebelsky (repeat o	f T5) Whitehill Room

Electronic Journals: For Whom the Bell Tolls

Wed 11:00 AM - 12:30 PM

Chair: Donald Kreider Dartmouth

Panelists:

Donald Albers MAA

Herbert Wilf U. of Pennsylvania

David L. Rodgers U. of Michigan

Ed Murphy PWS Publishers

Rapid growth in electronic dissemination of text and graphics has resulted in the founding of electronic journals in computer science, mathematics and many other fields. A panel of scholars and publishers examines how the role of authors and publishers will change in these new electronic waters. What is a publication? What are the real costs of electronic publication? How are copyright and other issues of intellectual property to be handled in the '90s?

Scholarly Electronic Publishing and Access: New Models from Publishers and Librarians

Wed 2:00 PM - 3:30 PM

Chair: John R. James Dartmouth

Panelists:

Janet Fisher The MIT Press

Carol Magenau Dartmouth

Kieth L. Seitter American Meteorological Society

Scholarly electronic journals are emerging as a new part of the publishing world and the virtual library collection. Models and ideas for handling electronic journals are being developed, and several of these will be presented. However, there are many unresolved issues and problems that are of concern to both publishers and librarians. The panelists will present their views on a variety of these issues, including production, quality, access, cataloging, copyright, and archiving of scholarly electronic journals.

Emerging User Interfaces for the Information Superhighway

Wed 4:00 PM - 5:30 PM

Chair: Robert Jacob Tufts

Panelists:

Hermann Maurer Graz U. of Tech.

Fillia Makedon Dartmouth

Sha Xin Wei Stanford

Tim Lenoir Stanford

P. Takis Metaxas Wellesley

One of the keys to the success of using the Information Superhighway is the design of an "efficient" user interface: one that is easy to use, functional and which enables the automation and fast processing of material. The following four user-based perspective interfaces will be considered: for electronic journals, for digital libraries, for educational interactive multimedia materials, and for 3-D graphics and research in virtual reality.

Electronic Multimedia Publishing Over the World Wide Web

Wed 4:00 PM - 5:30 PM

Chair: Michael J. Palmer American Management Systems Panelists:

Hope A. Greenberg U. of Vermont

Robert A. Duffy Strategic Communications

Jennifer Bort Yacovissi Communications and Systems Specialists, Inc.

This session will bring together four WWW practitioners and commentators. They will discuss and illustrate several of the diverse online multimedia publication practices. Many initiatives are pushing well beyond the conventional boundaries of print and electronic publishing: primary-source facsimile scholarship in the humanities, corporate identity and PR, museum outreach and education, grass-roots, predominantly counter-cultural periodicals or zines.

Expanding Museum Based Education Using Multimedia Tools

Wed 8:00 PM - 10:00 PM

Chair: Charles Fenton Renaissance Digital

Panelists:

Cynthia Char Education Development Center

Bryant Patten Bryten Inc.

Jerry Romelczyk Walpole Public Library

Most Americans today receive their knowledge from media based platforms: TV, movies, radio. Although these media successfully entertain, they are limited in historical accuracy. As a result, the sense of historical perspective is becoming lost in American culture. This panel will: discuss ways to incorporate modern network and computer technology into a knowledge based learning platform, develop scenarios which can be used by historical organizations and look at ways local institutions can plug into national level information programs.

Electronic 'Texts' for Engineering Education and Technical Training: Issues and Progress

Wed 8:00 PM - 10:00 PM

Chair: Al Henning Dartmouth

Panelists:

Mimi Jett Electronic Technical Publishing

Tom Rich Bucknell

John Erickson Dartmouth

Bob Lynch McGraw-Hill

Engineering education at the university level, and similarly corporate technical training in areas such as VLSI design, have a number of special needs with respect to the prospects for electronic publishing. As traditional textbook publishers turn to digital production, storage, and retrieval of knowledge-based products, there are questions of access, infrastructure, and intellectual property rights, which inhibit the development of tools for engineering education, and all areas of higher education.

Directions in Humanities Publications

Thurs 10:30 AM - 12:00 Noon

Chair: Gregory Crane Tufts

Panelists:

Michael Roy Harvard

Neel Smith Holy Cross

Maria Daniels Tufts

The panelists will be discussing application of electronic technologies to other fields. The following topics will be covered: Development of encyclopedic models on African-American culture, geographic Information Systems and archeology, electronic photography and the study of the history of art.

Use of Animation and Visualization in Educational Electronic Publishing

Thurs 10:30 AM - 12:00 Noon

Chair: Viera Proulx Northeastern University Panelists:

Harriet Fell Northeastern University

Peter Gloor Union Bank of Switzerland

Marian Williams U Mass-Lowell

Richard Rasala Northeastern University

This panel will show several ways a computer can be used as a modeling and demonstration tool for different types of dynamic processes. It will examine ways animation systems can be used in classroom presentations, as well as their uses for independent exploration by small groups of students, or in supervised laboratory sessions. The panel will also discuss the ways interactive experimentation can elevate the value of electronic text books.

The Freedom of the Press Project—Electronic Publishing Lessons for Libraries, Information Technology and University Presses

Thurs 1:30 PM - 3:00 PM

Chair: Susan Logue Southern Illinois University, Library Affairs Panelists:

Carolyn Snyder SIU, Dean of Library Affairs

Rick Stetter SIU, University Press

Jay Starratt SIU, Library Affairs

Mike Schwartz SIU, Information Systems

The Freedom of the Press Project represents a model for developing electronic library resources by creating an environment of partnership and cooperation across departments in a university setting. We will present an overview of this project from a variety of perspectives. We will illustrate how this project developed from an inexact idea of what might be possible to a unique scholarly resource only through cooperation and the sharing of information across departmental lines.

The Publishers' Perspective

Thurs 3:30 PM - 5:00 PM

Chair: Fillia Makedon Dartmouth

Panelists:

Frederick Bowes Cadmus Digital Solutions

Bruce Judson Time Inc.

Brewster Kahle WAIS

Edward Murphy PWS Publishing

Peter Prichard Freedom Forum

While researchers are forging ahead with the development of new tools, consortia and establishing new technologies, fundamental policy issues need to be addressed. Standards need to be developed. The panelists offer different perspectives based on their positions and experience. From his perspective as manager of the multimedia division of the largest publishing company, Time Inc., Bruce Judson will describe exciting new developments in integrating news and media from a wide variety of sources. Peter Prichard, the past CEO and founder of USA Today and currently of Freedom Press, will represent the view of a traditional newspaper publisher involved in electronic newspaper research. Brewster Kahle will explain the publishing position from a network perspective. Ed Murphy will address educational publishing issues. Frederick Bowes, former publisher of the New England Journal of Medicine and creator and former president and CEO at Macmillan New Media will speak about multimedia publishing.

Perils and Pitfalls of Electronic Conference Proceedings

Fri 10:30 AM - 12:00 Noon

Chair: Samuel A. Rebelsky *Dartmouth* Panelists:

Robert B. Allen Bellcore

Frank Baker NCSA

Charles Owen Dartmouth

Robert Mack IBM

The multiple-author anthology is an important and evol-ving form of publishing that is significantly affected by the advent of electronic publishing. In addition to having different ideas and writing styles, authors in an anthology may use a wide variety of electronic document preparation systems and even those who use the same system may use it in quite different ways. This increases the difficulty of the anthologists' task, as they must find a way to bring diverse formats together into a coherent document. Electronic conference proceedings are a particularly interesting instance of the multiple-author anthology as they are further complicated by very short deadlines and a very large number of authors.

The members of this panel will share their experiences collecting, organizing, and disseminating electronic conference proceedings from a wide variety of conferences, both large and small. The issues they will discuss include document formats, submission mechanisms, audience response, future plans, and implications of electronic proceedings.

Obstacles in The Design and Implementation of Company-Wide Information Highways

Fri 1:30 PM - 3:00 PM

Chair: Peter A. Gloor *Union Bank of Switzerland* Panelists:

Tim Berners-Lee MIT
Brewster Kahle WAIS

Jim Leavitt Bremer Associates

On-line systems like Archie, WAIS, DowQuest, etc., and most prominently WWW, offer direct access to many sources of information around the world. This concept has been enthusiastically embraced by the business community. But, if a large multinational corporation tries to implement its own internal information superhighway, it faces problems of: scale, security, organization and how to use WWW inside a company. It is the goal of this panel to discuss these and related problems and to offer some insights and possible solution approaches.

TUTORIALS INTRODUCTION

We are very pleased with the selection of tutorials we offer in DAGS95. The tutorials cover a wide spectrum of subjects, and they are all taught by experts in their fields. The topics covered include: a comprehensive introduction to multimedia systems and applications; detailed coverage of the SGML and HyTime hypermedia documentation languages; an introduction to the Adobe Portable Document Format (PDF); and authoring for the World Wide Web using HTML. The tutorials were carefully selected and tuned to ensure the satisfaction of the participants, to maximize their gains in a short period of time, and cover many of the important issues that today's pioneers of electronic publishing face.

P. Takis Metaxas Tutorials Chair

T1 Information Distribution Using the Portable Document Format: An Architecture and Tools for Practical Electronic Publishing

John Ciccarelli and Steve Zilles

Tues 10:00 AM - 5:30 PM

This tutorial presents an architecture for creating electronic documents and shows how the Portable Document Format (PDF) and the products which produce or accept PDF can be used to create interesting information packages for such diverse environments as electronic mail, the World Wide Web and CD-ROM's. PDF is an open, interchange format for final form documents that can include typographically set text, line and area graphics, and raster images. The tutorial will also introduce the inter-application communication and plug-in interfaces that allow the incorporation of electronic documents in many application environments, including Document Management, Full Text Searching, publishing research results and collections.

This tutorial is designed for people who are preparing or planning to prepare material for electronic publication and people who produce documents on any application or applications that are capable of producing PostScript(tm) Language output that they may want to publish electronically.

John Ciccarelli is a member of the Developer Relations group at Adobe Systems, and is in charge of developer training for Adobe Acrobat. His 18 years of software development experience includes 2 years on the Acrobat engineering team, 4 years at Plexus Software, and a 2-year stay at Xerox PARC's Integrated Circuit Lab. John holds a BS in Electrical Engineering from the University of Maryland.

Steve Zilles is the Corporate Manager of Standards for Adobe Systems, Inc. He has taken a lead role in the development of standards for presentation document interchange and the management of network and desktop printers, including the work of: ANSI X3V1, ISO JTC 1/SC 18/WG 8, IETF, CGATS, DDAP and ANSI X12: EDI. He is an author of the SNMP Printer MIB and the DMTF Printer MIF. He is an editor of the ISO Standard Page Description Language (SPDL) standard and he has been active in the standardization of the Portable Document Format, an interchange format for electronic presentation documents.

This Tutorial requires experience with using computers to produce documents, printed or electronic.

T3 Introduction to Multimedia Information Systems

Dr. John Buford

Tues 10:00 AM - 5:30 PM

New developments in computing and communications technologies are at the forefront of the multimedia revolution. The course provides an up-to-date survey of major applications and technologies in multimedia information systems. Lectures include example applications and systems presented on 35mm slides and video tape.

The course will be valuable to computer and communications professionals, including engineers, programmers, managers, and researchers who need a short and thorough overview of the applications, issues, architectures, and technology directions of distributed multimedia systems.

Dr. John F. Buford is an experienced researcher, author, and instructor in the area of Multimedia Information Systems. He is Associate Professor of Computer Science and Director of the Distributed Multimedia Systems Lab at the University of Massachusetts Lowell. Dr. Buford has more than twenty-five published papers and is contributing editor of the book Multimedia Systems (ACM Press & Addison-Wesley,1994). Dr. Buford is US Head of Delegation to ISO MHEG, chair of X3L3.3 Multimedia and Hypermedia Information Encoding, and is an expert on multimedia computing standards. He is a member of the editorial board of J. Multimedia Tools and Applications, program committee member for various multimedia conferences, and has been a panelist on multimedia technology at various conferences.

This is a technical course which assumes familiarity with conventional computing concepts. Familiarity with digital video and audio media is helpful but not required.

T4 An Introduction to SGML

Liora Alschuler

Tues 2:00 PM - 5:30 PM

This tutorial is a non-technical introduction to Standard Generalized Markup Language (SGML) with an emphasis on its application to online publishing. The first hour explains the principles behind SGML and compares electronic books based on SGML with online books that use unstructured, format-based alternatives. The second hour looks at several examples where SGML is used for electronic books in academic, technical, and commercial publishing. The third hour surveys the tools and skill set required to produce SGML-encoded publications.

This tutorial is for publishers and information technology managers, academicians and authors who have an interest in electronic publishing, who may be aware of SGML, and may be in the process of evaluating this technology for their own publishing requirements. Participants will learn where SGML adds value to electronic publications and will receive an overview of the tools and technologies required for SGML-based electronic publishing.

Liora Alschuler is a writer and publishing consultant living in East Thetford, Vermont. She has written about hypertext and SGML for the national computer press, including Publish Magazine and ComputerWorld, since 1989. Her book, *ABCD...SGML: A Guide to Structured Information*, will be available in May, 1995, from International Thomson Computer Press.

This tutorial has no prerequisites

T5 T8 Authoring for the World Wide Web

Samuel A. Rebelsky

(T5) Tues 2:00 PM - 5:30 PM (T8) Sat 9:00 AM - 12:30 PM

Among the fast growing platforms for electronic publishing is the World Wide Web (WWW). During 1993, the WWW grew by over 440,000% in 1993 and by over 1,700% in 1994. The authors of materials on the WWW range from school children to front-line researchers, from amateur 'zine writers to professional publishers, from devotees of a particular subject to large business. It has been claimed that "anyone can write documents for the WWW."

This tutorial will prepare the participants to do just that. In particular, participants will learn how to create documents in HTML, the formatting language used by the WWW. The concepts discussed will include the basics of HTML, logical vs. visual formatting, including graphics and "links" to other documents in a WWW document, recent extensions to HTML, designing your personal "look," and when to follow and when to break conventions. If time permits, we will discuss more advanced features, including visual maps and fill-in forms.

Samuel A. Rebelsky is a visiting assistant professor of Computer Science and assistant director of the Dartmouth Experimental Visualization Laboratory at Dartmouth College and is co-chair of the DAGS95 Conference on Electronic Publishing and the Information Superhighway. He received his Ph.D. from the University of Chicago in 1993. Dr. Rebelsky's research interests include electronic publishing, multimedia, and programming languages. Dr. Rebelsky has taught WWW authoring to a variety of audiences, including novice students and computer science researchers and has presented work on using the WWW in teaching at the International WWW Conference.

No prior knowledge is required for this tutorial.

T7 Introduction to HyTime

Lloyd Rutledge

Sat 9:00 AM - 4:00 PM

Hypermedia/Time-based Structuring Language (HyTime) is an ISO standard for hypermedia documentation. It is an extension of Standard Generalized Markup Language (SGML) that encodes the hypermedia information within a document. The objective of this tutorial is to familiarize the audience with the basics of HyTime. All of the modules and most of the constructs from the standard will be covered.

This tutorial introduces HyTime to novices of both HyTime and SGML. The structure of the ISO document for HyTime will be described so participants will be able to use it as a reference for detailed information. Attendees will also be better able to gauge the appropriateness of HyTime for their needs.

Lloyd Rutledge received his BS degree from the University of Massachusetts at Amherst in 1987 and his Master of Science degree in Computer Science from the University of Massachusetts Lowell in 1993. He is currently researching his doctoral thesis on the processing of HyTime. He has also served on the HyTime development committee, published several articles on HyTime, and presented tutorials on HyTime at SGML 92, ICMCS 94, and ACM Multimedia 94.

BIRDS OF A FEATHER SESSIONS

Chair: Viera Proulx

Wednesday 8:00 PM - 10:00 PM

These are impromptu sessions organized at the time of the conference to stimulate discussion of various topics. If you are interested in organizing one, contact Viera Proulx on-site.

CONFERENCE VOLUNTEERS

Chair: Michael Ferrantino

We would like to gratefully acknowledge the many people who contributed their time to help make DAGS95 a success, including:

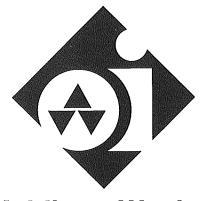
Arif M. Bhatti, Boston University, Boston W. John Burns, Dartmouth Carlos Ribeiro deCunha, Boston University, Boston Kevin DeLuca, Cambridge Harriet Fell, Boston University, Boston Susan Funke, Indiana Robert Gray, Dartmouth (DAGS Intern) Johannes A.G.M. Koomen, Ph.D., New York Cesar Rene Valdez Martinez, Mexico Hani Mawlawi, Boston University, Boston Ekaterina Pelekhov, Dartmouth (DAGS Intern) Arturo Roel Samano, Mexico Stephan Spencer, U. Wisconsin-Madison Qin Zhang, Dartmouth (DAGS Intern)

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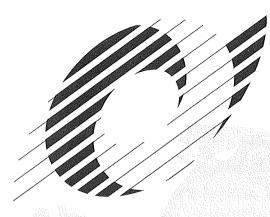
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6. The duration of a future DAGS conference should be: shorter / longer Reasons:
7. My interest with regard to participating in a future conference is as follows:
8. I suggest you contact the following person(s) to be involved in future conferences on electronic publishing:
9. I would be willing to assist in the organization of future conferences in the following capacity:
10. Additional comments: